

Claims

- [c1] 1. The invention of a technique for changing deamidation rates of Asn and Gln residues in peptides, hormones, proteins and peptide-like, hormone-like, and protein-like molecules through modification of the residue or residue-like structure to the right (or carboxyl side) of the amide.
- (a) This can be done through substitution of either a natural or non-natural amino acid side chain.
- (b) The effects of many such modifications are known based on experimental work which has been carried out.
- (c) From the results described in (b) many other similar modifications can be inferred.
- [c2] 2. The invention of a technique as in claim 1, but modifying the residue or residue-like structure to the left (or amino side) instead of to the right.
- [c3] 3. The invention of a technique for changing deamidation rates of Asn and Gln residues in peptides, hormones, proteins and peptide-like, hormone-like, and protein-like molecules by swapping Gln for Asn or Asn for Gln.

- [c4] 4. The invention of a technique for changing deamidation rates of Asn and Gln residues in peptides, hormones, proteins and peptide-like, hormone-like, and protein-like molecules through modification of structures in the near vicinity to the amide as determined by a three-dimensional prediction procedure.
- [c5] 5. The extension of the inventions in claims 1, 2, 3, and 4 to isomerization, chain cleavage, or other reactions similar to deamidation for Asn and Gln residues or residue-like structures in a similar manner to those described in claims 1, 2, 3, and 4.
- [c6] 6. The extension of claims 1, 2, 3, and 4 to the isomerization, chain cleavage or other reactions similar to deamidation for Asp and Glu side-chains.
- [c7] 7. The use of the inventions in claims 1, 2, 3, 4, 5, and 6 to predict the rates of deamidation, isomerization, chain cleavage or similar related reactions.